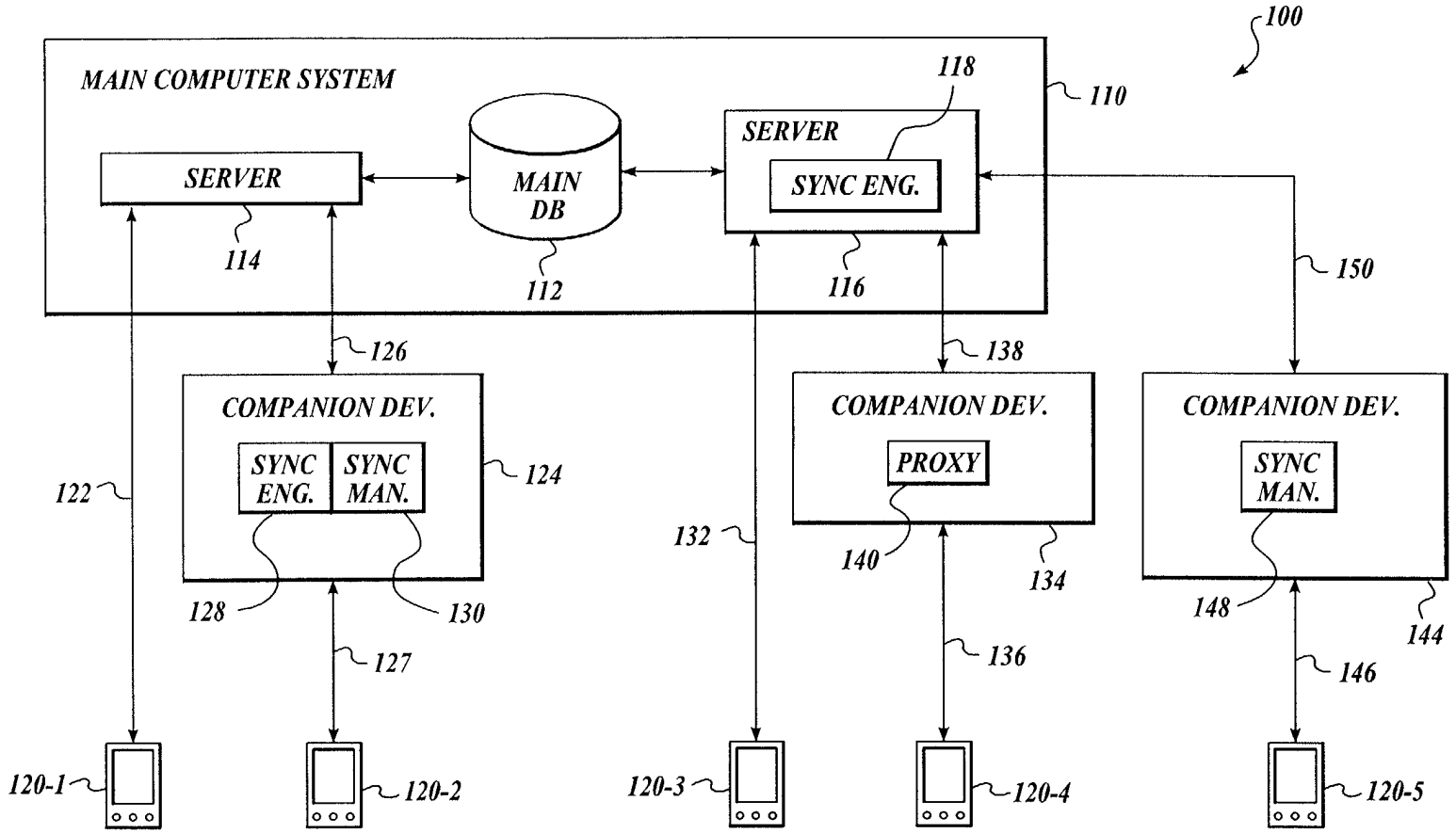
100
MAIN COMPUTER SYSTEM
110
118
SERVER
SYNC ENG.
SERVER
MAIN DB
114
112
116
150
126
138
COMPANION DEV.
SYNC ENG.
SYNC MAN.
124
122
COMPANION DEV.
PROXY
COMPANION DEV.
SYNC MAN.
132
140
134
128
130
148
144
127
136
146
120-1
120-2
120-3
120-4
120-5

Fig. 1

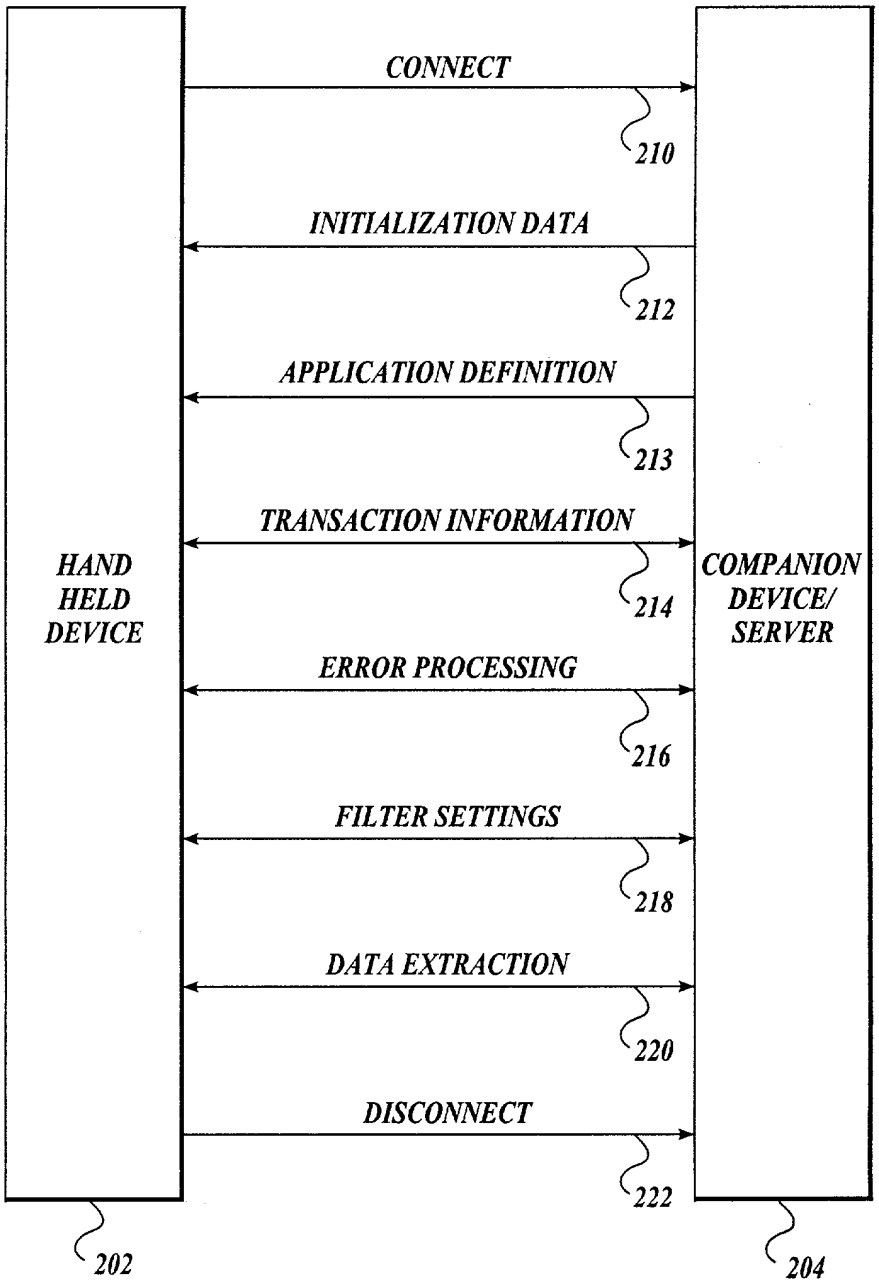
CONNECT
210
INITIALIZATION DATA
212
APPLICATION DEFINITION
213
TRANSACTION INFORMATION
214
ERROR PROCESSING
216
FILTER SETTINGS
218
DATA EXTRACTION
220
DISCONNECT
222
HAND HELD DEVICE
202
COMPANION DEVICE/ SERVER
204

Fig. 2

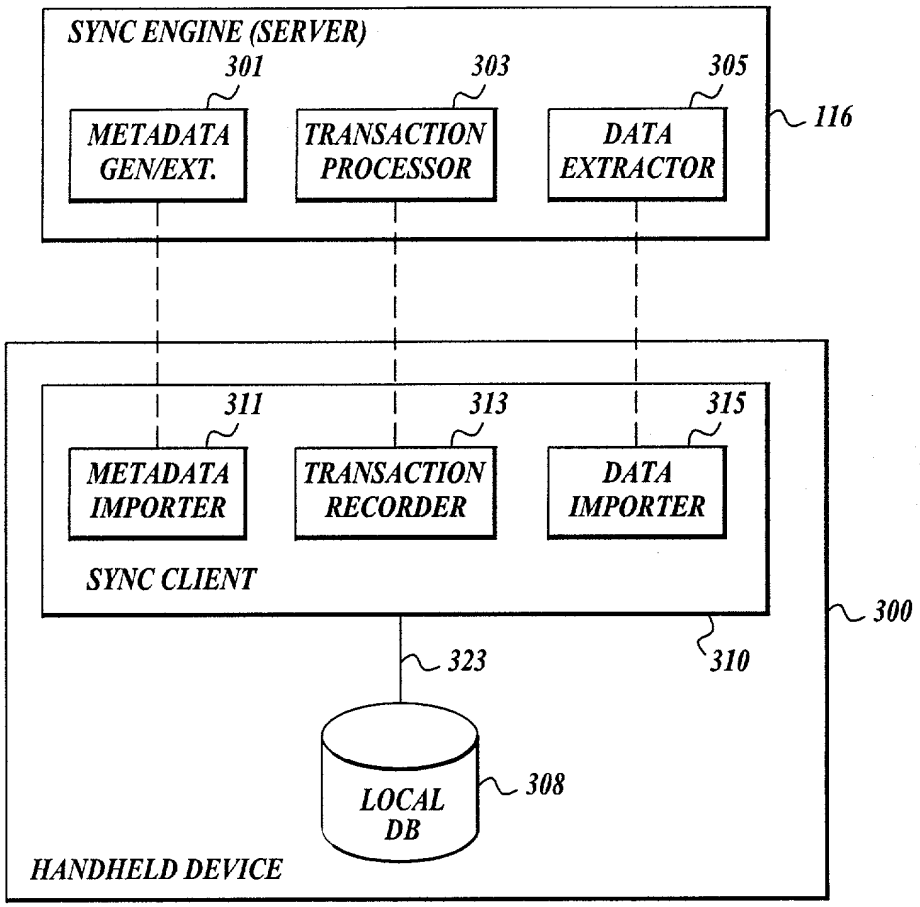
SYNC ENGINE (SERVER)
301
303
305
METADATA GEN/EXT.
TRANSACTION PROCESSOR
DATA EXTRACTOR
116
311
313
315
METADATA IMPORTER
TRANSACTION RECORDER
DATA IMPORTER
SYNC CLIENT
300
310
323
LOCAL DB
308
HANDHELD DEVICE

Fig. 3

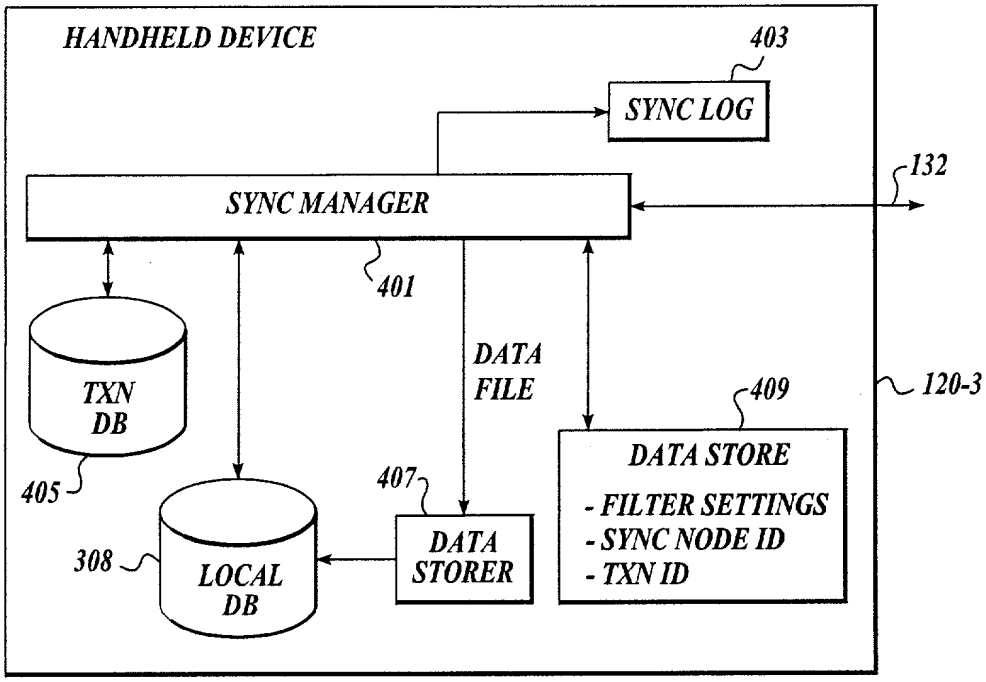
HANDHELD DEVICE
403
SYNC LOG
132
SYNC MANAGER
401
TXN DB
405
DATA FILE
409
120-3
DATA STORE
- FILTER SETTINGS
- SYNC NODE ID
- TXN ID
407
308
LOCAL DB
DATA STORER

Fig. 4

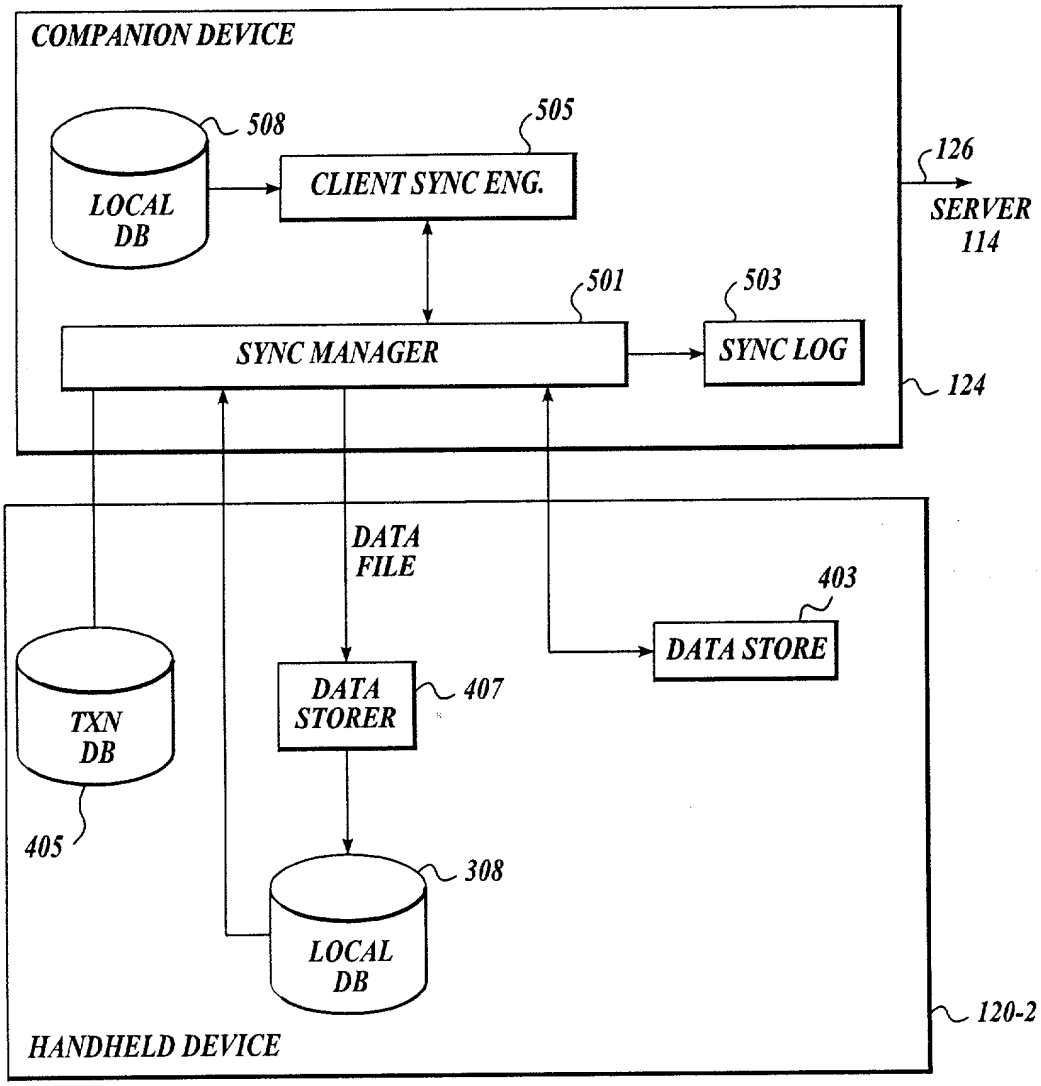
COMPANION DEVICE
508
LOCAL DB
505
CLIENT SYNC ENG.
126
SERVER 114
501
503
SYNC MANAGER
SYNC LOG
124
DATA FILE
403
DATA STORE
TXN DB
DATA STORER
407
405
308
LOCAL DB
120-2
HANDHELD DEVICE

Fig. 5

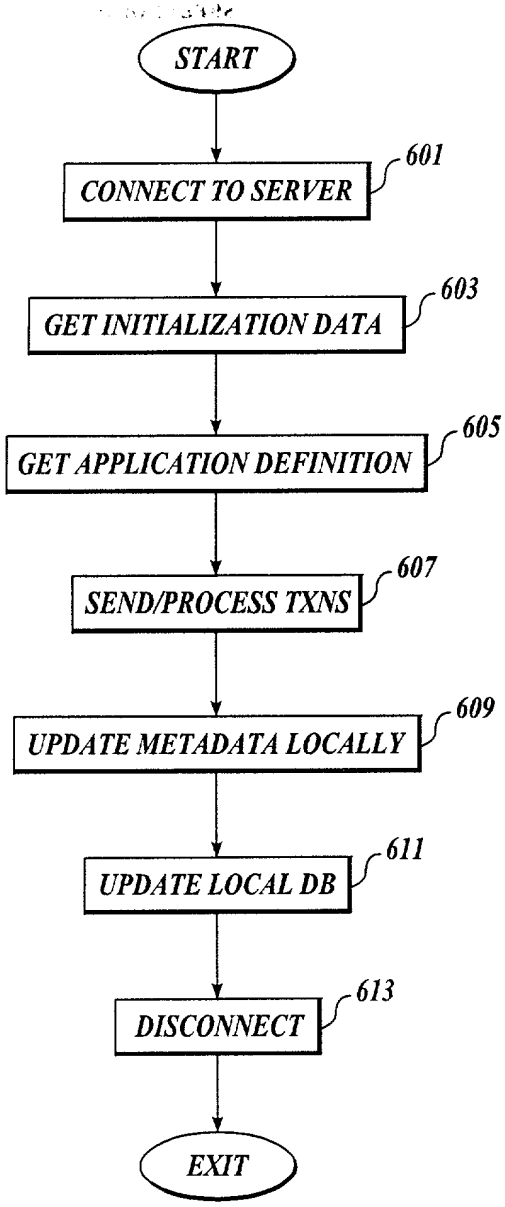
START
CONNECT TO SERVER
601
GET INITIALIZATION DATA
603
GET APPLICATION DEFINITION
605
SEND/PROCESS TXNS
607
UPDATE METADATA LOCALLY
609
UPDATE LOCAL DB
611
DISCONNECT
613
EXIT

Fig. 6

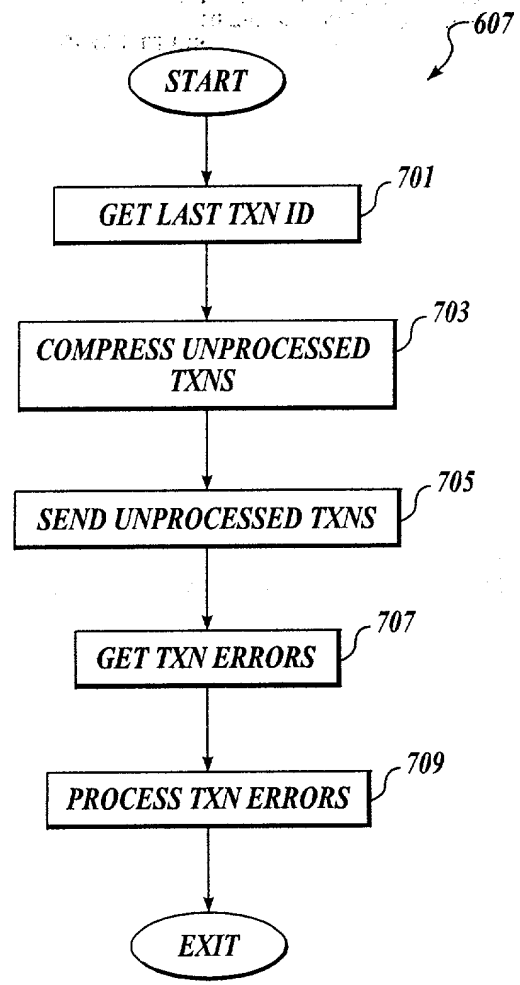
607
START
701
GET LAST TXN ID
703
COMPRESS UNPROCESSED TXNS
705
SEND UNPROCESSED TXNS
707
GET TXN ERRORS
709
PROCESS TXN ERRORS
EXIT

Fig. 7

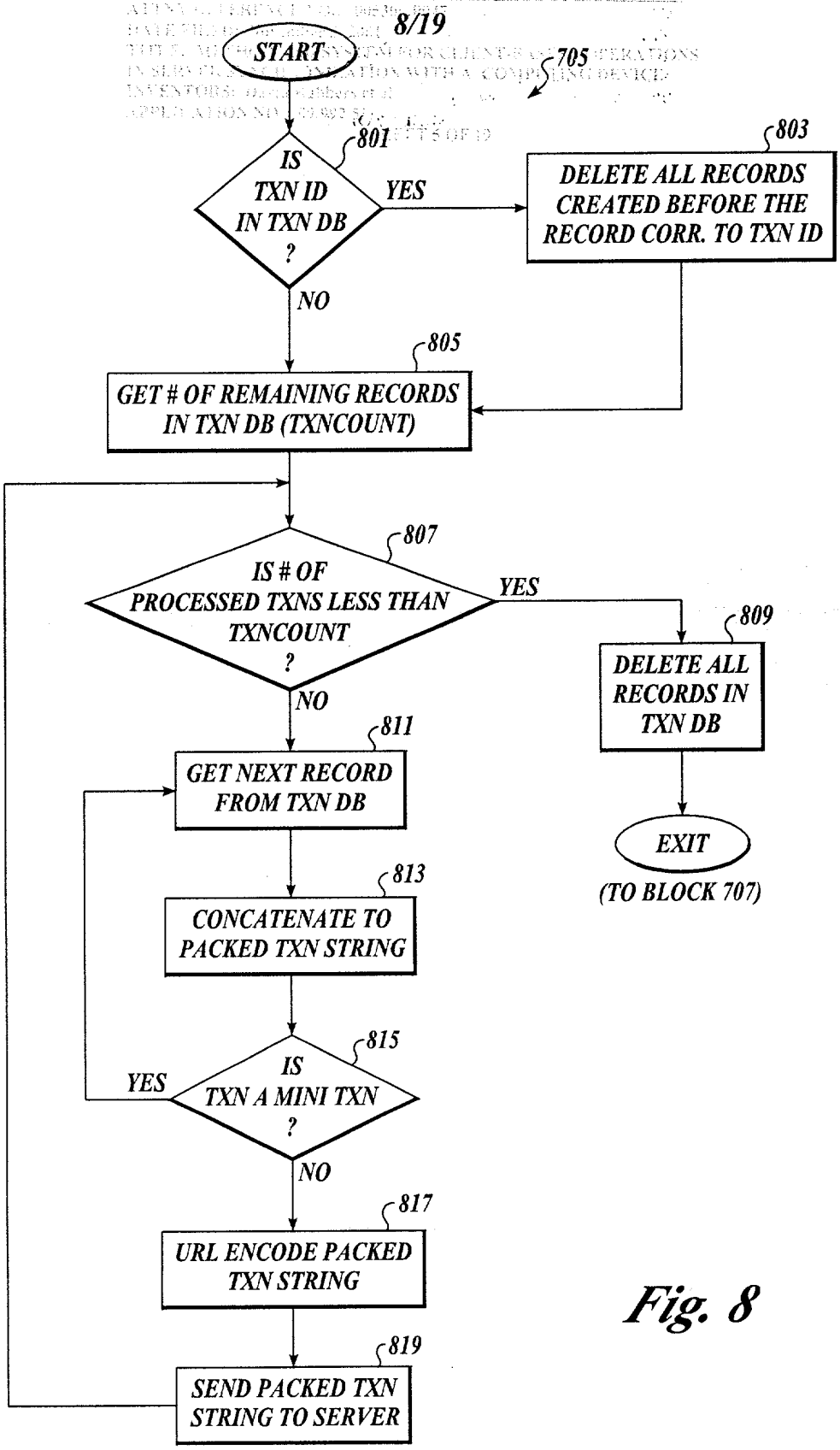
START
705
801
IS TXN ID IN TXN DB ?
YES
803
DELETE ALL RECORDS CREATED BEFORE THE RECORD CORR. TO TXN ID
NO
805
GET # OF REMAINING RECORDS IN TXN DB (TXNCOUNT)
807
IS # OF PROCESSED TXNS LESS THAN TXNCOUNT ?
YES
809
DELETE ALL RECORDS IN TXN DB
EXIT
(TO BLOCK 707)
NO
811
GET NEXT RECORD FROM TXN DB
813
CONCATENATE TO PACKED TXN STRING
815
IS TXN A MINI TXN ?
YES
NO
817
URL ENCODE PACKED TXN STRING
819
SEND PACKED TXN STRING TO SERVER

Fig. 8

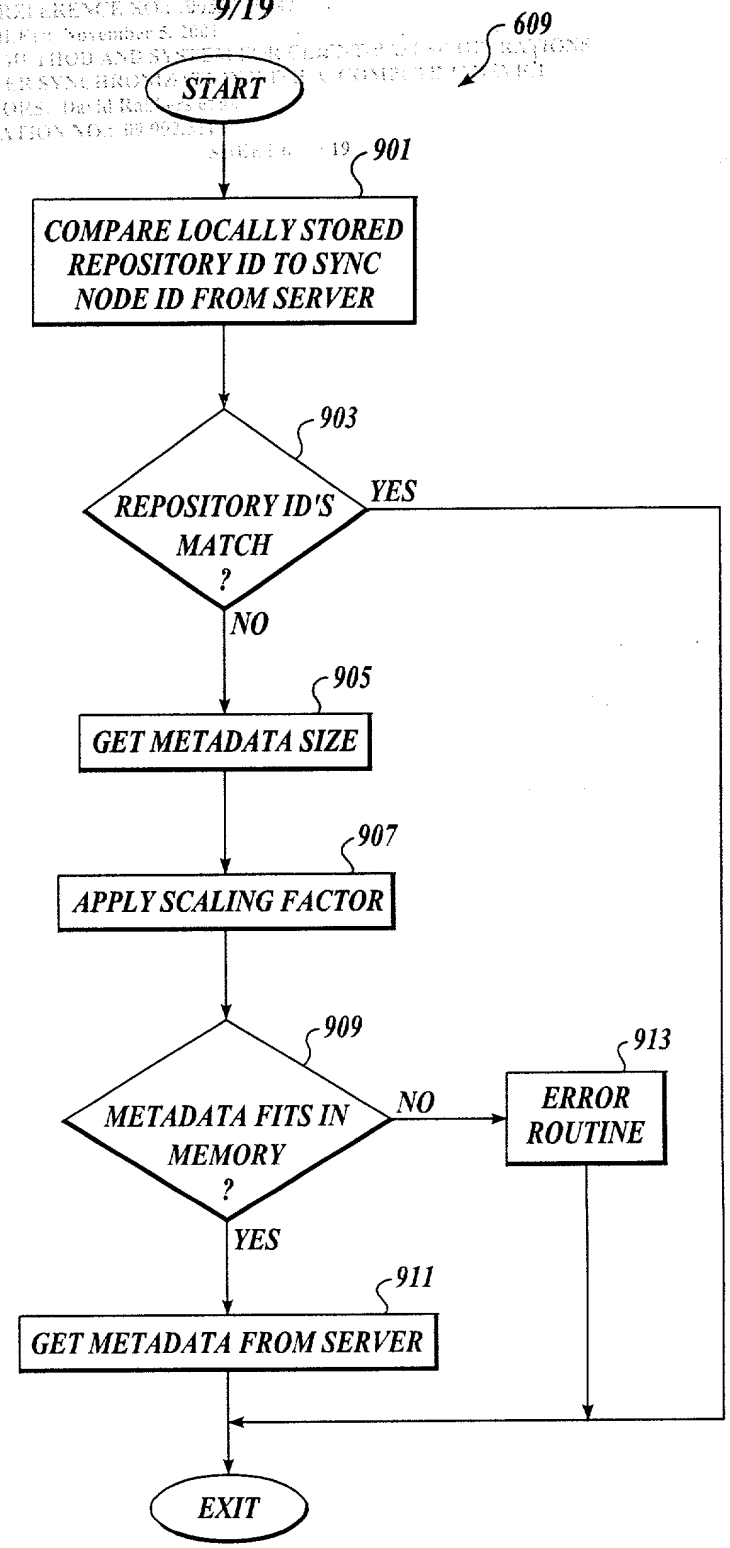
609
START
901
COMPARE LOCALLY STORED REPOSITORY ID TO SYNC NODE ID FROM SERVER
903
REPOSITORY ID'S MATCH ?
YES
NO
905
GET METADATA SIZE
907
APPLY SCALING FACTOR
909
METADATA FITS IN MEMORY ?
NO
913
ERROR ROUTINE
YES
911
GET METADATA FROM SERVER
EXIT

Fig. 9

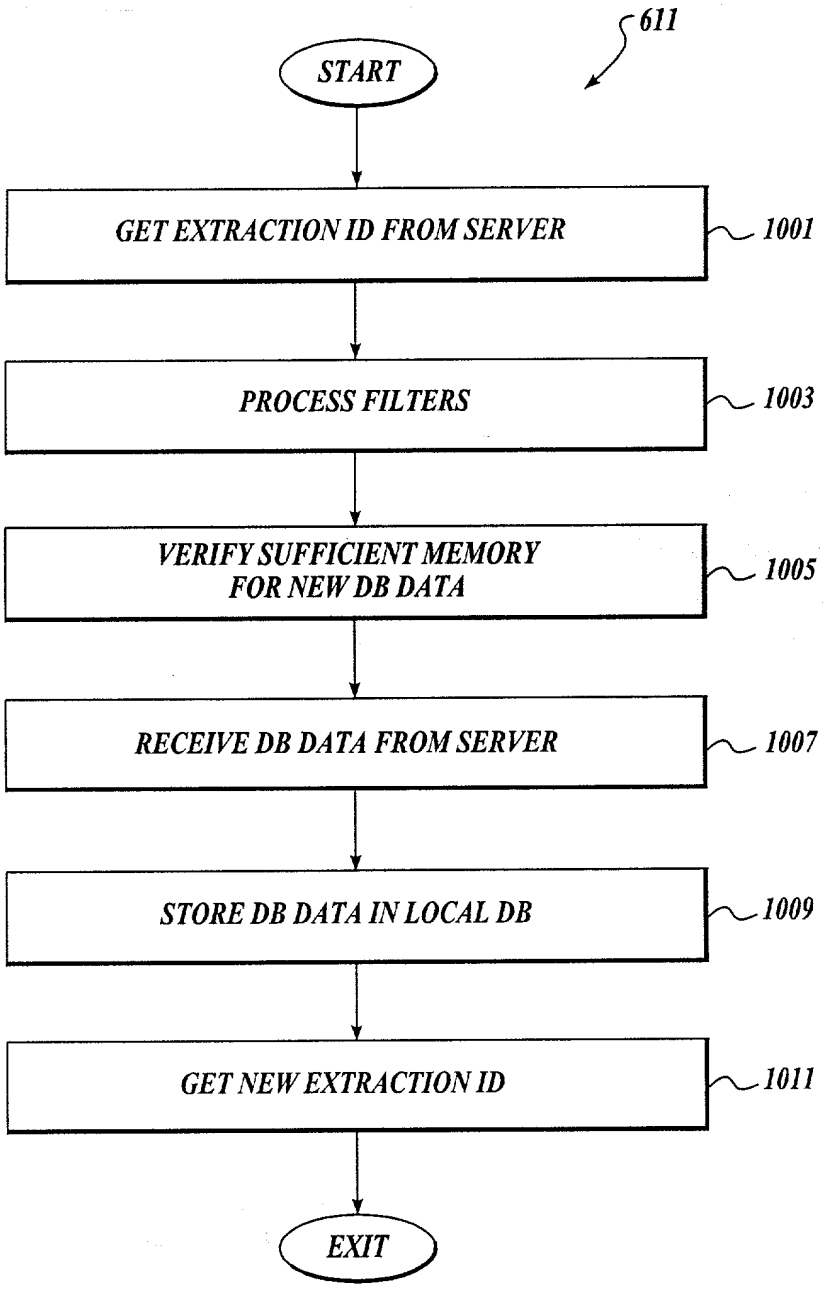
611
START
GET EXTRACTION ID FROM SERVER
1001
PROCESS FILTERS
1003
VERIFY SUFFICIENT MEMORY FOR NEW DB DATA
1005
RECEIVE DB DATA FROM SERVER
1007
STORE DB DATA IN LOCAL DB
1009
GET NEW EXTRACTION ID
1011
EXIT

Fig. 10

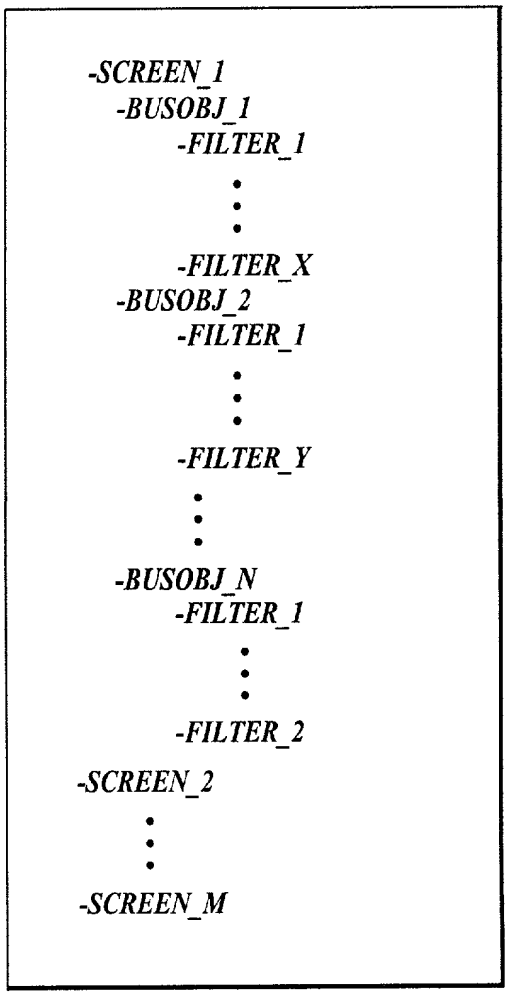
-SCREEN_1
-BUSOBJ_1
-FILTER_1
-FILTER_X
-BUSOBJ_2
-FILTER_1
-FILTER_Y
-BUSOBJ_N
-FILTER_1
-FILTER_2
-SCREEN_2
-SCREEN_M

Fig. 10A

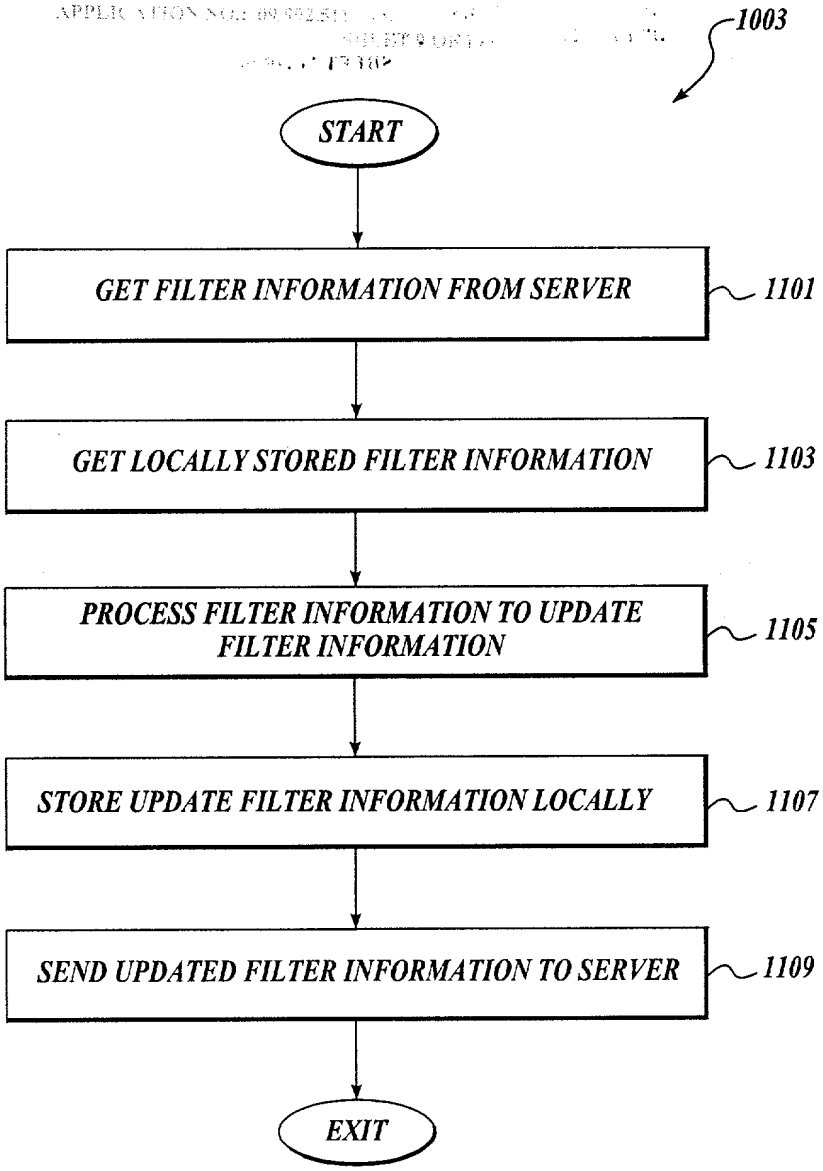
1003
START
GET FILTER INFORMATION FROM SERVER
1101
GET LOCALLY STORED FILTER INFORMATION
1103
PROCESS FILTER INFORMATION TO UPDATE FILTER INFORMATION
1105
STORE UPDATE FILTER INFORMATION LOCALLY
1107
SEND UPDATED FILTER INFORMATION TO SERVER
1109
EXIT

Fig. 11

FIG. 12

FIG. 12A	FIG. 12B	FIG. 12C

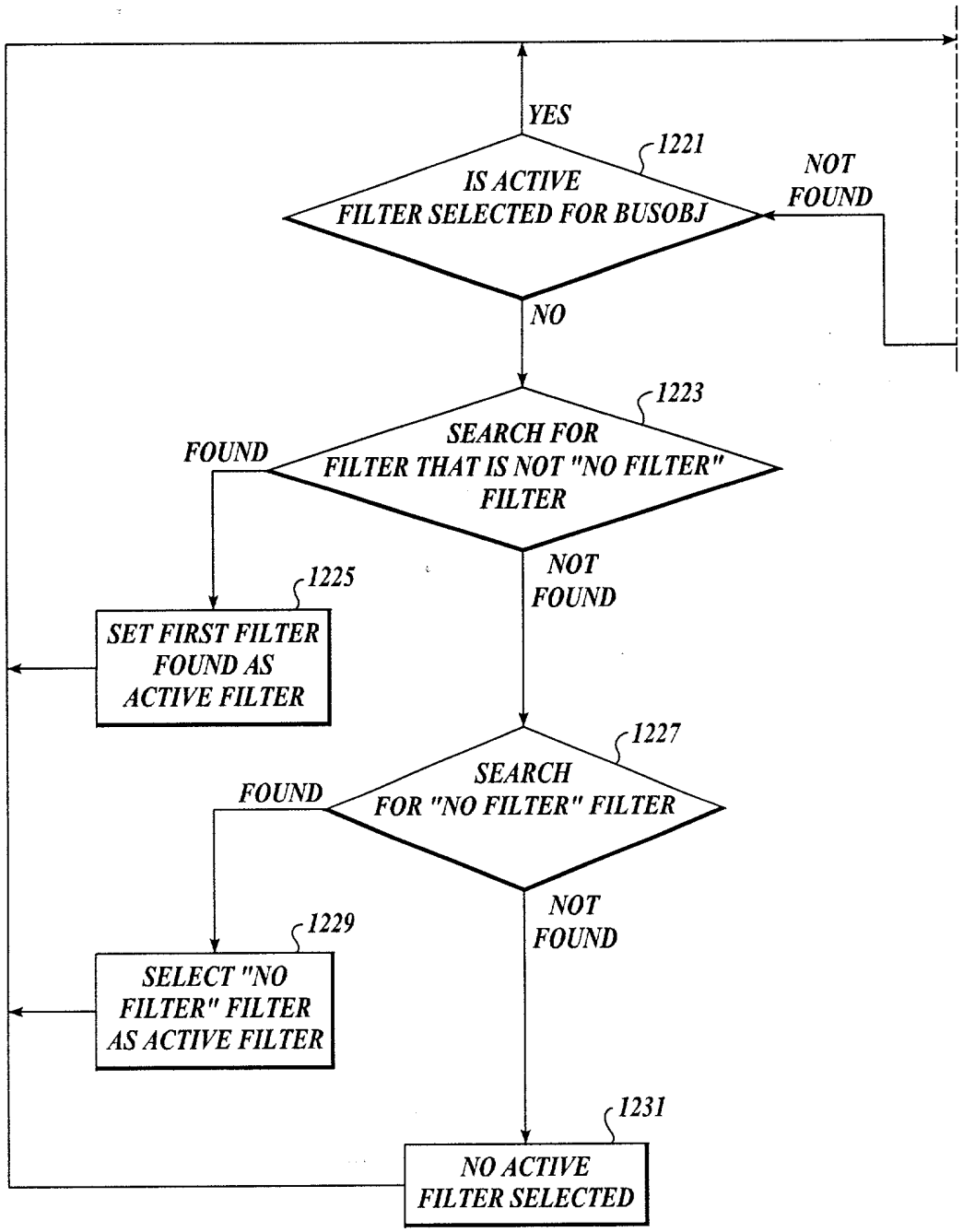

Fig. 12A

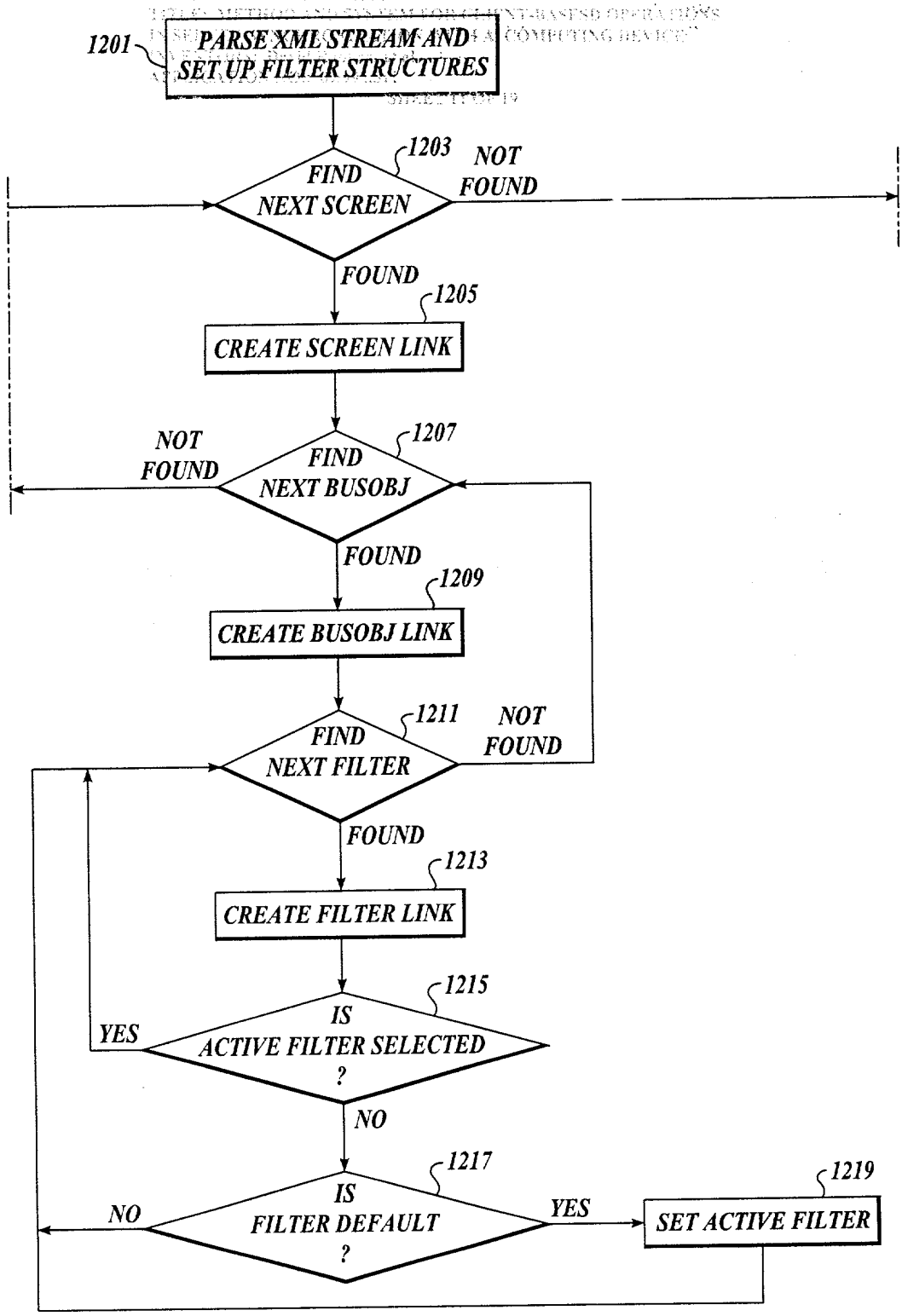
1201
PARSE XML STREAM AND SET UP FILTER STRUCTURES
1203
FIND NEXT SCREEN
NOT FOUND
FOUND
1205
CREATE SCREEN LINK
1207
FIND NEXT BUSOBJ
NOT FOUND
FOUND
1209
CREATE BUSOBJ LINK
1211
FIND NEXT FILTER
NOT FOUND
FOUND
1213
CREATE FILTER LINK
1215
IS ACTIVE FILTER SELECTED ?
YES
NO
1217
IS FILTER DEFAULT ?
NO
YES
1219
SET ACTIVE FILTER

Fig. 12B

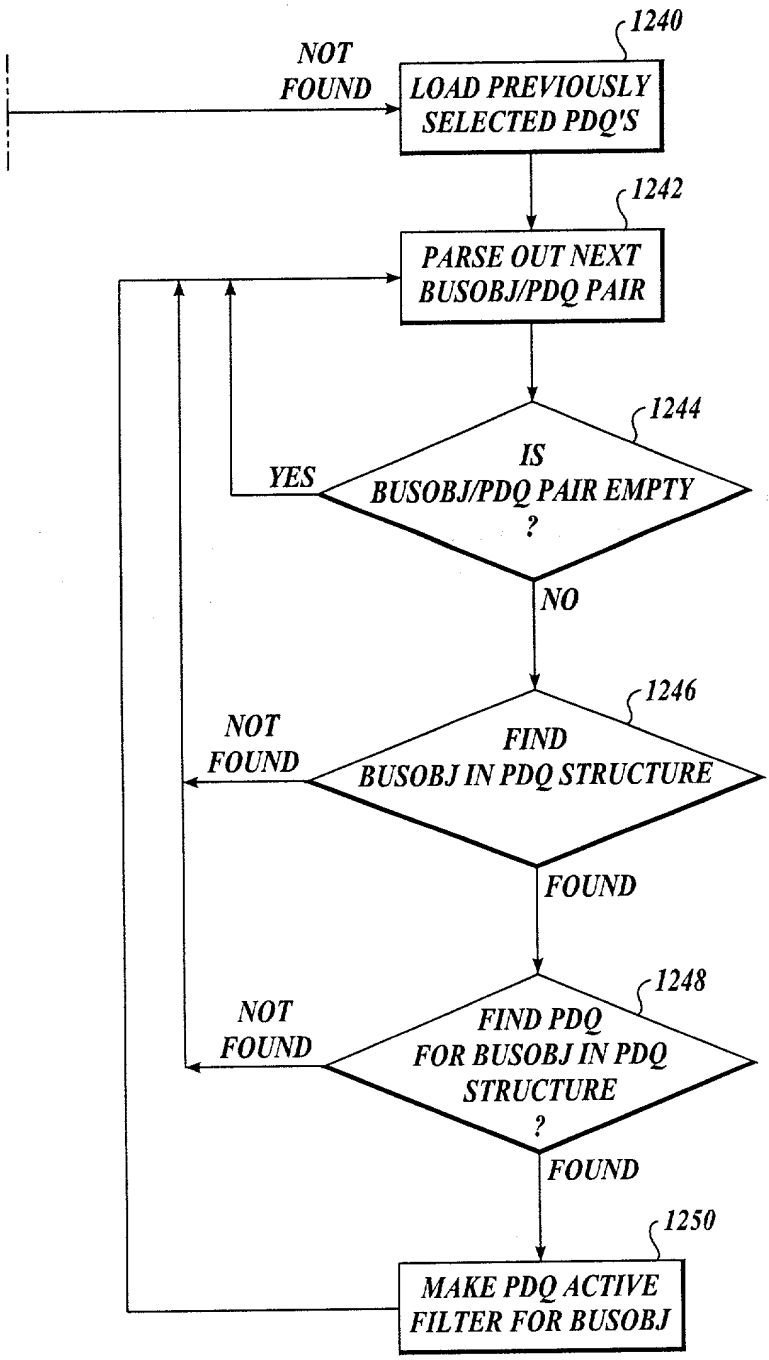
1240
NOT FOUND
LOAD PREVIOUSLY SELECTED PDQ'S
1242
PARSE OUT NEXT BUSOBJ/PDQ PAIR
1244
YES
IS BUSOBJ/PDQ PAIR EMPTY ?
NO
1246
NOT FOUND
FIND BUSOBJ IN PDQ STRUCTURE
FOUND
1248
NOT FOUND
FIND PDQ FOR BUSOBJ IN PDQ STRUCTURE ?
FOUND
1250
MAKE PDQ ACTIVE FILTER FOR BUSOBJ

Fig. 12C

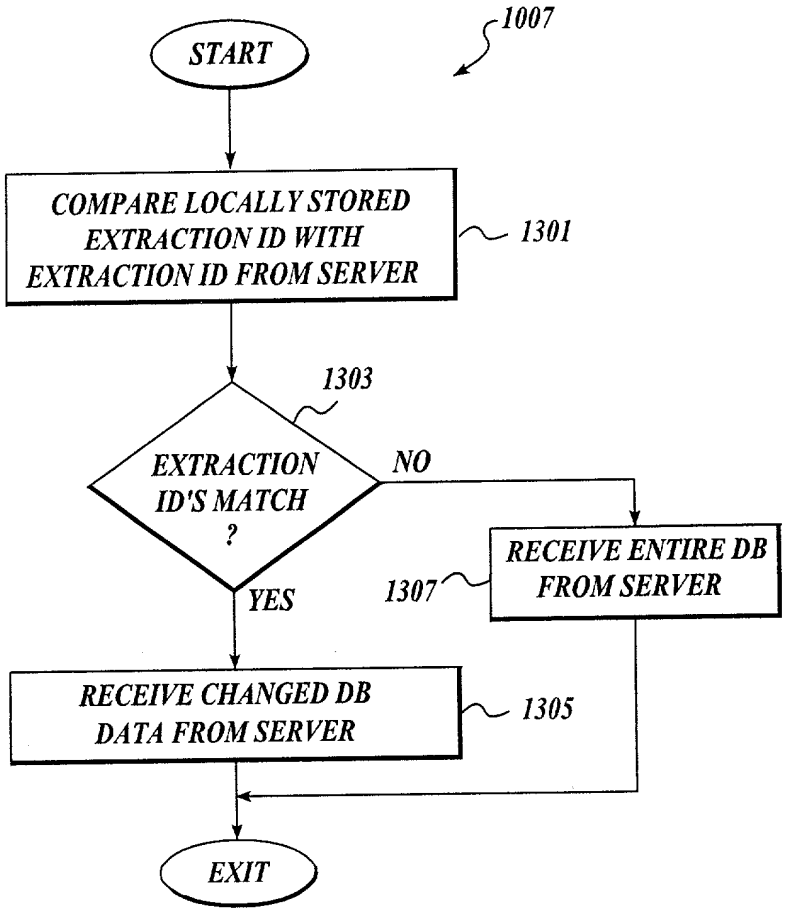
1007
START
COMPARE LOCALLY STORED EXTRACTION ID WITH EXTRACTION ID FROM SERVER
1301
1303
EXTRACTION ID'S MATCH ?
NO
YES
1307
RECEIVE ENTIRE DB FROM SERVER
RECEIVE CHANGED DB DATA FROM SERVER
1305
EXIT

Fig. 13

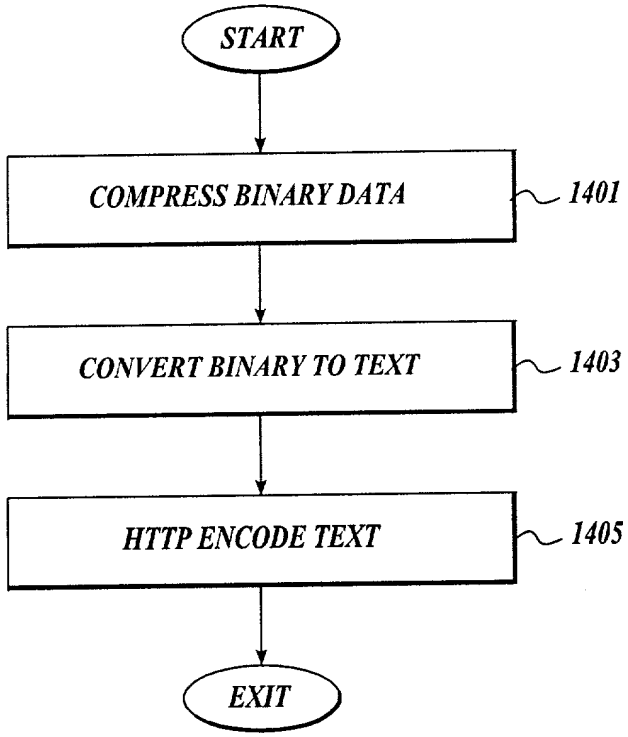
START
COMPRESS BINARY DATA
1401
CONVERT BINARY TO TEXT
1403
HTTP ENCODE TEXT
1405
EXIT

Fig. 14

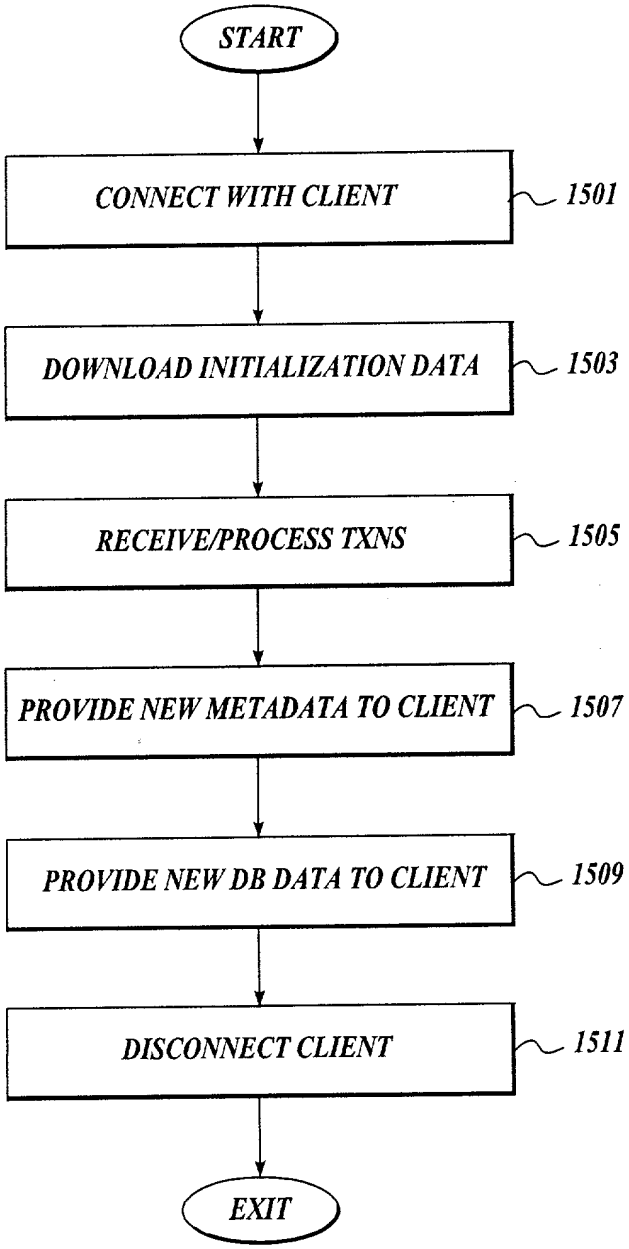
START
CONNECT WITH CLIENT
1501
DOWNLOAD INITIALIZATION DATA
1503
RECEIVE/PROCESS TXNS
1505
PROVIDE NEW METADATA TO CLIENT
1507
PROVIDE NEW DB DATA TO CLIENT
1509
DISCONNECT CLIENT
1511
EXIT

Fig. 15

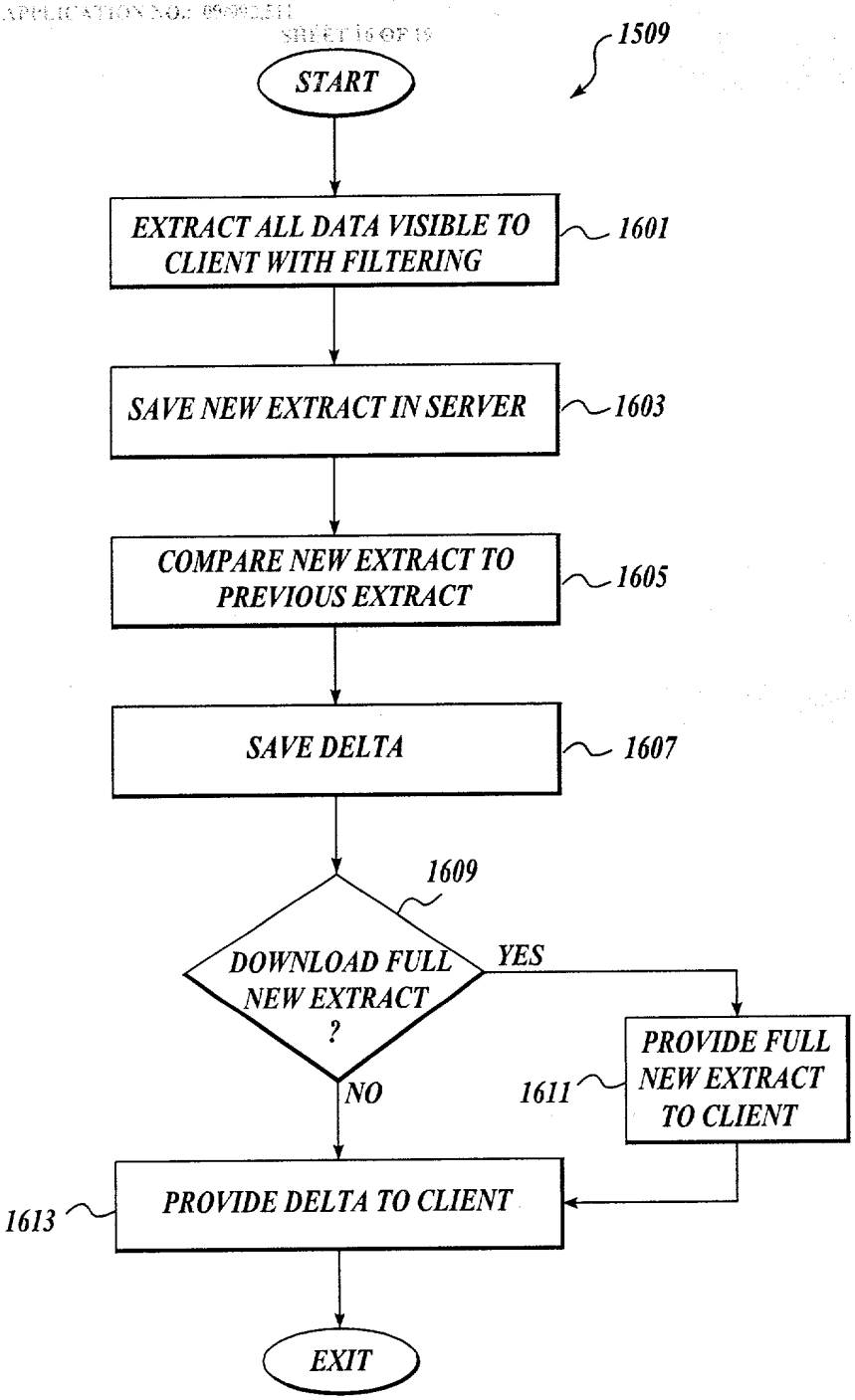
1509
START
EXTRACT ALL DATA VISIBLE TO CLIENT WITH FILTERING
1601
SAVE NEW EXTRACT IN SERVER
1603
COMPARE NEW EXTRACT TO PREVIOUS EXTRACT
1605
SAVE DELTA
1607
1609
DOWNLOAD FULL NEW EXTRACT ?
YES
NO
1611
PROVIDE FULL NEW EXTRACT TO CLIENT
1613
PROVIDE DELTA TO CLIENT
EXIT

Fig. 16